

DSG Hall A LAPPD Meeting Minutes

Date: April 23, 2024

Time: 11:00 PM – 12:00 PM

Attendees: Peter Bonneau, Pablo Campero, Brian Eng, George Jacobs, Tyler Lemon, Simona Malace, and Marc McMullen

1. Gantry support assembly

Pablo Campero and Marc McMullen

1. Marc McMullen made a presentation showing modifications and final assembly of the gantry support
2. Marc McMullen modified model to reflect changes in the structure
 - Added eight footers to the structure, two per pillar
 - Added two 24'' bars for more stability, each located ~7'' from the base of the dark box
3. Pablo Campero tested movement of the gantry installed on support structure in X and Y directions for a velocity range from 1 to 100 mm/s, using local controller knobs and using remote Zaber software
4. Marc McMullen and Pablo Campero made final adjustments, leveled the gantry support structure, and test fit the gantry and support inside the dark box

2. Gantry system controls

Pablo Campero and Simona Malace

1. After testing both local and remote controls, Pablo Campero recommends using remote controls since readback of the actual position and any communication error with the motors of the gantry are available
2. Per Simona Malace, a Windows laptop is available for the test stand in ESB
 - Pablo Campero will install Zaber Launcher version 1.10.2

3. Optical fiber length

Pablo Campero, Simona Malace, and Marc McMullen

1. Pablo Campero calculated the length for the optical fiber should be ~2.94''; Simona Malace cut the fiber to 3'' and 1.5''
2. Grease will be used to allow easy displacement of the optical fiber inside the LED box holders

4. LED Box design

Pablo Campero and Simona Malace

1. Pablo Campero completed assembly of LED, LED holder, LED support, and LED box
2. Simona Malace fabricated the cable to connect and control LED
3. Pablo Campero installed cable with LED inside the LED box

5. Static structural analysis of the gantry's structure

Pablo Campero

1. Pablo Campero used Ansys Static Structural to calculate the maximum deformation ($<4.5 \mu\text{m}$), moment, and force reactions of a block with similar dimensions to the T-slot profile used for the gantry's support
 - Pablo Campero created a model that includes the T-slot profile used for the gantry's support; maximum deformation would be less than $69.6 \mu\text{m}$ and varies based on the assigned region for the fixed supports
2. Calculations of maximum deformation, moment, and force reactions for entire gantry support is in progress

6. Plans for final gantry system installation

Pablo Campero, Marc McMullen, and Simona Malace

1. Agreed to meet on Thursday at 10:30 am in the ESB building to install gantry positioning system inside the dark box
2. Pablo Campero will print the readout board with pixel dimension
3. Simona Malace will unbundle existing cables at the dark box's side wall orifices to allow the exiting of the two motor cables and the LED cable
4. Initial test will be done with the dark box cover opened